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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/764,381	01/19/2001	Satoshi Kondo	2001-0040A	7667

513 7590 12/22/2003

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EXAMINER

AZARIAN, SEYED H

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 12/22/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/764,381	KONDO ET AL.	
	Examiner	Art Unit	
	Seyed Azarian	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,4,15,23,25,28,30,33,35,40,45 and 50 is/are allowed.
- 6) ☒ Claim(s) 1,3,5-7,9-14,16-18,20-22,24,26,27,29,31,32,34,36-39,41-44, 46-49, 51-52 is/are rejected.
- 7) ☒ Claim(s) 8 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 5-7, 9-14, 16-18, 20-22, 24, 26-27, 29, 31-32, 34, 36-39, 41-44, 46-49 and 51-52, are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama (U.S. patent 6,347,118) in view of Kawabata (U.S. patent 6,370,262).

Regarding claim 1, Takayama discloses an image processing method comprising;

noise detection step of performing noise detection on an image; noise removal step of removing noise from a predetermined region of the image, and noise removal step of removing noise from a predetermined region of the image on the basis of the result of the noise detection (column 9, lines 5-16, a quantity of noise can be estimated from amount of high frequency component of image and noise reduction level is increased by the noise reduction means).

arithmetic step of obtaining the ratio of an area targeted for noise removal to the predetermined region of the image, on the basis of the result of the noise detection and image generation step of generating an image indicating the ratio, on the basis of the ratio obtained in the arithmetic step (column 8, lines 1-15, noise in a predetermined area is detected and ratio can be improved according to the result of detection which indicates ratio and improvement).

However Takayama fails to disclose, "area ratio ". On the other hand Kawabata teaches with a border of a predetermined distance in accordance with distance measurement result in the respective areas, or an area ratio (column 3, lines 42-50).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention was made, to modify Takayama invention according to the teaching of Kwabata because it provides the relationship in quantity, amount or size between two area of image sensing that minimize the image detritions, which can easily be implements in an video device for enhancing the image and better result.

Regarding claim 3, Takayama discloses an image processing method comprising: noise detection step of detecting the position and intensity of noise in an image; noise removal step of removing noise from a predetermined region of the image, on the basis of the position and intensity of noise detected in the noise detection step; arithmetic step of obtaining, for each intensity level of noise, the ratio of an area targeted for noise removal to the predetermined region of the image, on the basis of the position and intensity of noise detected in the noise detection step; and image generation step of generating an image indicating the ratio for each intensity level of

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noise, on the basis of the ratio obtained in the arithmetic step (column 5, line 66 through column 6, line 8, predetermine pixels and level of brightness).

Regarding claim 6, Takayama discloses an image processing method comprising: noise detection step of detecting noise in an image; noise removal step of removing noise from the image on the basis of the result of the noise detection; and image composition step of spatially combining a part of the image before being subjected to noise removal in the noise removal step with a part of the image from which noise has been removed, to generate a composite image for display (Fig. 15, column 12, lines 51-65, refer to comparing and displayed).

Regarding claim 9, Takayama discloses an image processing method as defined in Claim 1 further comprising: image decoding step of decoding an image code sequence to generate a decoded image, said noise detection step of performing noise detection using information included in the image code sequence; and said noise removal step of removing noise from the decoded image obtained in the image decoding step, on the basis of the result of the noise detection (Fig. 7, column 7, lines 21-36, the reference numeral is a coder which encodes the output of the quantizer).

Regarding claim 10, Takayama discloses an image processing method as defined in Claim 1, wherein said noise is one of blocking artifact and ringing artifact (column 6, lines 56-62, refer to moving impulse noise).

Regarding claim 11, Takayama discloses an image processing method as defined in Claim 1, wherein the predetermined region to be subjected to noise removal in the noise removal step is an assembly of pixels in the vicinity of a boundary of each

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block (column 7, lines 1-13, pixels and changes the number of pixels according to a noise level).

Regarding claim 13, Takayama discloses an image processing apparatus comprising: noise detection means for performing noise detection on an input image; noise removal means for removing noise from a predetermined region of the input image, on the basis of the result of the noise detection; arithmetic means for obtaining the ratio of an area targeted for noise removal to the predetermined region of the input image, from the result of the noise detection; statistics calculation means for obtaining the statistics on the ratios obtained by the arithmetic means over a predetermined (column 9, lines 36-45, calculating noise of the image).

Regarding claim 17, Takayama discloses an image processing apparatus comprising: noise detection means for performing noise detection on an input image; noise removal means for removing noise from the input image on the basis of the result of the noise detection; and image composition means for receiving the input image and the output image from the noise removal means, and spatially combining a part of the input image with a part of the output image from the noise removal means, to generate a composite image to be output (Fig. 4, column 6, lines 32-39, an input terminal of an analog video signal to be compressed and an output terminal for the coded data).

Regarding claims 5, 12, 14 and 16, it recites similar limitation as claims 1 and 3, are similarly analyzed.

Regarding claims 20-22, 24, 26-27, 29, 31-32, 34, 36-39, 41-44, 46-49 and 51-52, it recites similar limitation as claims 7, 9, 10 11 and 18, are similarly analyzed.

Allowable Subject Matter

3. Claims 8 and 19, are objected as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims.

Allowable claims

4. The following is an examiner's statement of reasons for allowance.

The claim 2, is allowable due to statistics calculation step of obtaining the statistics on the ratios obtained in the arithmetic step over a predetermined period of time, and image composition step of superimposing the image generated in the image generation step on the image before being subjected to noise removal in the noise removal step or on the image from which noise has been removed, to generate a composite image for display.

These key features in combination with the other features of the claimed invention are neither taught nor suggested by the art of record.

Claims 4 and 15 recite substantial very similar limitations as claim 2 above and is allowed for the same reason.

Thus claims 2, 4, 15, 23, 25, 28, 30, 33, 35, 40, 45 and 50, are allowable.

Other prior art cited

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. patent (4,916,542) to Yoneda et al is cited for picture quality adjusting circuit with fir filter for digital processing.

U.S. patent (4,941,055) to Fujimoto is cited for recording apparatus with improved s/n ratio.

U.S. patent (4,733,302) to Kinoshita et al is cited for image sensor or an image sensing apparatus.

U.S. patent (6,321,027) to Honjo is cited for video signal recorder and method of recording video signals.

U.S. patent (4,691,247) to Honjo et al is cited for video signal recording/reproducing apparatus.

U.S. patent (6,115,077) to Tsukagoshi is cited for apparatus and method for encoding and decoding digital video data operable to remove noise from subtitle data included therewith.

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Azarian whose telephone number is (703) 306-5907.

The examiner can normally be reached on Monday through Thursday from 6:00 a.m. to 7:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta, can be reached at (703) 308-5246.

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Any response to this action should be mailed to:

Assistant Commissioner for Patents
Washington, D.C. 20231


Or faxed to:

(703) 872-9306, ("draft" or "informal" communications should be clearly
labeled to expedite delivery to examiner).

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal
Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be
directed to T.C. customer service office whose telephone number is (703) 306-0377.

Seyed Azarian
Patent Examiner
Group Art Unit 2625
November 30, 2003


TIMOTHY M. JOHNSON
PRIMARY EXAMINER